I claim:

1. A method of making an active optical device for coupling to an external light guide, comprising the steps of:

providing a substrate with a light path therethrough and having a front face and a rear face;

providing a plurality of components for attachment to the rear face of said substrate, each said component having a face presenting an array of contacts, said components including at least one active optical component selected from the group consisting of a light emitter and light receiver;

forming a plurality of arrays of contacts on the rear face of said transparent substrate at precisely defined locations corresponding to an intended location of the contacts of each component;

flip-chip bonding said components onto said substrate using a solder alignment technique to attach said components to said substrate in precisely predetermined locations determined by said arrays of contacts; and

said at least one optical component being oriented so that it can be optically coupled through said substrate to the external light guide.

2. A method as claimed in claim 1, wherein said substrate is transparent to an operating wavelength of the device to permit light to pass therethrough.

3. A method as claimed in claim 1, wherein holes are provided in said substrate to permit light to pass therethrough.

4. A method as claimed in claim 1, further comprising providing at least one array of positioning pads on the rear face of said substrate, and attaching a guide frame to said substrate using a solder alignment technique to align said guide frame with said positioning pads, said guide frame serving to locate guide pins for said external light guide.

5. A method as claimed in claim 4, wherein said positioning pads comprise solder bumps for use in the solder alignment of said guide frame to said substrate.

6. A method as claimed in claim 4, wherein said positioning pads are arranged in opposed pairs extending on either side of a line.

7. A method as claimed in claim 4, wherein said arrays of contacts on said substrate comprise solder bumps for use in the solder alignment of said components to said substrate.

8. A method as claimed in claim 7, wherein said components include at least one driver circuit for said at least one optical component.

9. A method as claimed in claim 8, wherein said components further include a fan-out substrate having contacts for establishing electrical connection with the device.

10. A method as claimed in claim 1, wherein said substrate is made of glass.

11. A method as claimed in claim 10, wherein said substrate is made of sapphire.

12. A method as claimed in claim 4, wherein said guide frame is made of nickel.

13. A method as claimed in claim 1, further comprising bonding a heat sink on said substrate over said components and said guide frame, said heat sink including on a front side thereof facing the rear face of said substrate protruding guide pins for aligning said substrate with said external light guide, said guide pins being aligned with the aid of said guide frame.

14. A method as claimed in claim 13, wherein said guide frame contains holes located to permit said guide pins to pass through, said holes being located in wing portions of said guide frame extending beyond side edges of said substrate.

15. A method as claimed in claim 1, wherein said at least one active optical component is a VCSEL.

16. A method of making an active optical device for coupling to optical fibers, comprising the steps of:

providing a transparent substrate having a front face and a rear face;

providing a plurality of active components for attachment to the rear face of said substrate, each said active component having face presenting an array of contacts, said components including at least one optical component selected from the group consisting of a light emitter and light receiver;

forming a plurality of arrays of solder bumps on the rear face of said transparent substrate at precisely defined locations corresponding to an intended location of the

contacts of each component;

forming at least one array of solder pads on the rear face of said substrate at precise locations for locating a guide frame;

flip-chip bonding said components onto the rear face of said substrate using a solder alignment technique to attach said components to said substrate in precisely predetermined locations determined by said arrays of solder bumps;

said at least one optical component being oriented so that it can be optically coupled through said transparent substrate to an external light guide on the front face thereof; and

bonding said guide frame to said substrate using a solder alignment technique to locate said guide frame in a precise position, said guide frame including indicia marking the location of guide pins for said external light guide.

17. A method as claimed in claim 16, wherein said guide frame includes wing portions overhanging side edges of said substrate, said indicia being in said wing portions.

18. A method as claimed in claim 16, wherein said indicia are in the form of holes through which the guide pins can pass.

19. A method as claimed in claim 18, further comprising bonding a heat sink supporting said guide pins to said rear face of said substrate over said guide frame and said components.

20. An active optical device comprising:

a substrate providing a light path therethrough and having a front face and a rear face;

a plurality of components solder bonded to the rear face, said components including at least one active optical component located so that it can be coupled through the substrate to an external light guide;

a guide frame solder bonded to the rear face of the substrate; and

a heat sink having guide pins bonded on the rear side of said substrate, said guide pins protruding forward to engage recesses in an external light guide coupling.

21. An active optical device as claimed in claim 20, wherein said guide frame has bonding pads solder bonded to corresponding pads on said substrate.

22. An active optical device as claimed in claim 21, wherein said substrate is selected from the group consisting of sapphire and glass.

23. An active optical device as claimed in claim 20, wherein said at least one active optical component includes a VCSEL.